STDs According to the causative agent

Bacterial	Viral
Syphilis	AIDS
Chancroid	Herpes progenitalis
Lymphogranuloma venerum	Condyloma accuminata

Granuloma inguinale	Molluscum contagiosum
Gonorrhea	Viral hepatitis B (and may be HCV)
Non-gonococcal urethritis	
Protozoal	Parasitic
Trichomonas vaginalis	Genital scabies

According to the clinical presentation

Ulcer syndrome

- Syphilis
- Chancroid
- Lymphogranuloma venerum
- Granuloma inguinale
- Herpes progenitalis

Urethral discharge syndrome

- Gonorrhea
- Non-gonococcal urethritis

Other local presentations

- Condyloma accuminata
- Molluscum contagiosum
- Genital scabies

Systemically presenting STDs

- AIDS
- Viral hepatitis B and C

I. Syphalis

Caused by **Treponema pallidum**.

- Spirochete
- Spiral organism with regular coils.
- Moves in a "cork-screw" fashion.
- Cannot be grown on ordinary culture media.

ACQUIRED SYPHILIS	
Early infectious phase	Late non-infectious phase
First 2 years of infection	After 2 years of infection
stage 1. Primary stage 2. Secondary stage 3. Early latent stage	1. Late latent stage 2. Benign tertiary stage 3. Malignant tertiary stage: • Cardiovascular syphilis • Neuro-syphilis

CONGENITAL SYPHILIS		
Early infectious phase	Late non-infectious phase	Stigmata: Scars & deformities left after early and late lesions
First 2 years of life	From third year of life	Persist for life
1. No primary 2. Secondary 3. Early latent	1. Late latent 2. Benign 3ry 3. Malignant 3ry • Cardiovascular • Neurosyphilis	

Primary : chancre

- ☐ Genital (95%) or extra-genital (5%)
- ☐ starts as a macule → papule → ulcer (highly infectious)
  - ➢ Single
  - ➢ Painless
  - ➢ Rounded, well defined
  - ➢ Indurated base
  - ➢ Dull red floor with grayish scab
  - ➢ Spontaneous healing in 3-10 weeks → thin atrophic scar

Benign tertiary: (Gumma)

- Skin, M.M.
- Bones
- Viscera e.g. testis, liver, stomach

Diagnosis of syphilis

1. Dark ground microscopy: Exudate from the floor of chancre, from condyloma lata or lymph node puncture is examined under the dark ground microscope. Treponema pallidum appear luminescent with corck-screw motility.
2. Serological tests: These become positive only late in primary stage (50% are positive during the chancre stage and 100% are positive in the secondary stage). Serological tests are of two types:

Non-specific tests	Specific tests
1. Venereal disease research laboratory (VDRL) test 2. Rapid plasma reagin (RPR) test screening	1. Treponema pallidum hemagglutination antibody (TPHA) 2. Fluorescent Treponema antibody (FTA) 3. Treponema pallidum immobilization (TPI)

Treatment of syphilis

One of the following drugs can be used in the treatment of syphilis:

I- Procaine penicillin: 600,000 IU/day IM

- For 10 days (in early acquired syphilis)
- For 20 days (in late cases)

II- Benzathin penicillin: 2.4 million units IM

- For primary stage: single injection.
- For secondary stage: two injections separated by one-week interval.
- For tertiary stage: three injections separated by one-week interval.

III- Other antibiotics: if the patient is allergic to penicillin, we may give:

- Erythromycin: 500mg/6 hours for 15 days in early cases and for 30 days in late cases.
- Tetracycline: can be used in the same dose schedule (never in pregnant syphilitic women).

IV- Treatment of Congenital Syphilis: Procaine penicillin in a total dose of 50,000 IU/Kgm divided on 10 daily injections.

II. CHANCROID

Causative organism: Hemophilus ducreyii *gram negative bacilli*

Clinical presentation:

- IP: 2-5 days.
- Genital ulcer: Multiple small shallow painful ulcers that bleed easily on touch.
- Regional lymph nodes: Inguinal nodes are usually unilaterally affected, become acutely inflamed, swollen, tender and later get matted, suppurate

Treatment: One of the following may be used:

Tetracycline:

- Oxytetracyclin 500mg/6 hours for 21 days.
- Doxycycline 100mg/12 hours for 21 days.
- Minocyclin 100mg/12 hours for 21 days.

Macrolides

- Erythromycin 500mg/6 hours for 21 days.
- Rulid 300mg/12 hours for 21 days.
- Zithromax

III. LYMPHOGRANULOMA VENERUM

Causative organism: Chlamydia trachomatis (serotype $L_{1,2,3}$)

Clinical presentation:

- IP: 7-15 days.
- Genital ulcer: An initial papule or vesicle breaks down to an ulcer, which is usually transient disappearing in few days.
- Regional lymph nodes: Chlamydia spreads along lymph vessels leading to inguinal lymphadenopathy (usually bilateral). The enlarged lymph nodes get matted forming a sausage-shaped swelling below and above the inguinal ligament leaving a characteristic "sign of a groove" in between. When the nodes break down they open by multiple sinuses discharging semi-caseous material.
- Urethral discharge.
- Systemic symptoms: fever, headache, arthralgia, erythema nodosum and sometimes meningism.

Diagnosis: being an obligatory intracellular organism, chlamydia is diagnosed by:

- Giemsa-stained swab examination.
- Tissue culture on McCoy's medium.
- Direct immunofluorescence, PCR, ELISA.
- Frie's intradermal test

Treatment

- Erythromycin: 500mg/6 hours for 21 days.
- Tetracycline: 500mg/6 hours for 21 days.
- Doxycycline: 100mg/12 hours for 21 days.

IV. GRANULOMA INGUINALE

Causative organism: Calymmatobacterium granulomatis or donovanis (gram negative bacilli).

Clinical presentation:

- IP: 2-6 weeks.
- Genital ulcer: Granulomatous lesions develop on the genitals breaking down into ulcers with velvety appearance and raised everted edges clinically resembling malignant ulcers.
- Regional lymph nodes are not affected but subcutaneous granulomas in the inguinal region can be mistaken for enlarged lymph nodes "pseudo-bubo".

Diagnosis: Biopsy reveals the characteristic bacilli within the histeocytes "Donovani bodies".

Treatment:

- Tetracycline: 500mg/6 hours for 21 days.
- Erythromycin: 500mg/6 hours for 21 days.

V. HERPES PROGENITALIS

Causative organism:

- Herpes simplex virus type-2 (HSV-2) causes more than 90% of cases
- HSV-1 is responsible for less than 10% probably related to orogenital sex.

Clinical presentation:

- IP: 2-7 days.
- Genital lesion: Lesion can occur anywhere on the genital with tendency to be peri-orificial i.e. around urethral orifice and anal orifice. Burning sensation usually precedes the appearance of grouped vesicles on an erythematous base. These vesicles either rupture forming superficial erosions or get secondary infected leading to pustule formation. Dryness of the contents of the vesicle or pustule leads to the formation of crusts. Spontaneous healing takes 1-2 weeks but recurrences are common and precipitated by friction (sexual intercourse), psychic stress, etc.
- Regional lymph nodes: usually enlarged and tender.


Acyclovir

GONORRHEA

Causative organism;-

- Diplococci (pairs)
- Gram negative
- kidney shaped
- Non-motile
- Non-spore forming

First line therapy for uncomplicated gonorrhea	A single dose of Procaine penicillin 4.8 million units IM is given with1 gm probenecid orally to delay renal excretion of penicillin.
Patients refusing injection can be given:	▪ Ampicillin single dose of 3.5 gm orally with 1 gm oral probenecid. ▪ Amoxicillin single dose of 3 gm orally with 1gm oral probenecid.
Patients sensitive to penicillin can be treated with:	▪ Erythromycin: 500mg/6 hours for 5 days. ▪ Azithromycin 1gm single oral dose. ▪ Tetracycline: 500mg/6 hours for 5 days. ▪ Doxycycline: 200mg single oral dose.
Patients not responding to penicillin therapy may be having Penicillinase producing gonococci and can be treated with:	▪ Spectinomycin 2gm IM. ▪ Kanamycin 2gm IM. ▪ Cefotriaxone 250 mg IM. ▪ Quinolone: single dose of ciprofloxacin, norlfloxacin, or ofloxacin
Disseminated and complicated gonococcal infection:	▪ Hospitalization. ▪ Treatment for 1-2 weeks with higher dose of the previously mentioned drugs.

Non-gonococcal urethritis

1. Chlamydia trachomatis: Serovar D-K
2. Mycoplasma

ANDROLOGY

- Ureaplasma urealyticum
- Mycoplasma hominis

3. Trichomonas vaginalis
4. Intrameatal lesions e.g.

- Herpes progenitalis
- Chancre
- Lymphogranuloma venerum
- Condyloma accuminata

5. Others

- Uro-pathogens
- Stone urethra
- Oxaluria, etc.

IP 1-5 **weeks**

CONDYLOMA ACCUMINATA
"Venereal Warts"

Causative organism: Human papilloma virus (HPV).

Clinical presentation: Condyloma accuminata are warty outgrowths that have the following characters:

- Multiple (rarely single).
- Cauliflower-like (usually for penile or external vulval lesions) or flat (usually on mucous membranes of cervix).
- Dry non-oozing.
- Skin-colored or hyperpigmented.
- Variable in size from pinhead-size to large tumor "Buschke Lowvenstein Tumor".

Sites

- In males: penile shaft, pubic area, glans penis, intrameatal, perianal, groin, etc
- In females: Cervix, vagina, vulva, pubic area, perianal, etc

Aggravating factors: Immuno-suppression causes marked increase in the size and number of the lesion as in:

- Pregnancy
- Diabetes
- AIDS
- Immunosuppressive drugs

Complications:

a. Cancer cervix

Treatment:

- Repeated careful painting of the lesions with 25% podophyllin resin in alcohol or in liquid paraffin. This is contraindicated in pregnancy.
- Other chemical cauterizing agents e.g. trichloro-acetic acid.
- Electrocautery and surgical removal are less preferred.
- Intralesional or systemic Alpha-interferon.

MOLLUSCUM CONTAGIOSUM

Causative organism: Poxvirus.

Clinical presentation: this dermatological viral disease can be seen in the hands, face and trunk of children being transmitted by direct contact. In adults, multiple pearly-white papules with characteristic central umbilication develop on the external genital skin and pubic region being transmitted sexually.

Treatment: phenol cauterization and curettage.

Clinical presentation

Following an incubation period of variable duration, the disease passes by the following stages:

1. Acute retroviral stage:
   In 10% of infected persons, glandular fever-like symptoms occur concomitant with sero-conversion.

2. Asymptomatic stage:
   The patient is clinically free but serologically positive and infectious.

3. Persistent generalized lymphadenopathy:
   All lymph nodes especially the cervical and axillary groups show mobile, non-tender enlargement.
4. AIDS-related complex
5. Full blown AIDS

AIDS is characterized by opportunistic infections and Kaposi sarcoma and other malignant disorders. A wide range of clinical conditions hardly makes the diagnosis direct or classic.

Clinical case definition: at least 2 major criteria and at least two minor criteria in absence of a known cause of immuno-suppression.

Major criteria	Minor criteria

Major criteria	Minor criteria
▪ Weight loss more than 10 %. ▪ Diarrhea for more than 1 month. ▪ Fever for more than 1 month.	▪ Cough for more than 1 month ▪ Generalized pruritic dermatitis ▪ Recurrent herpes zoster ▪ Chronic disseminated herpes simplex ▪ Oropharyngeal candidiasis ▪ Generalized lymphadenopathy

Laboratory Diagnosis

Detection of HIV antibodies

HIV antibodies are detectable 4-8 weeks after expo

- Screening test: ELISA
- Confirmatory test: Western Blot Test

Detection of HIV

- HIV antigen tests: mainly used for detection (limited application).
- HIV culture.

Anti HIV Drugs

- Nucleoside reverse transcriptase inhibitors (RTIs): These drugs Inhibit virus replication through inhibiting reverse transcriptase enzyme e.g. Zidovudine.
- Non-nucleoside reverse transcriptase inhibitors (Non-RTIs): e.g. Nevirapine.
- Protease inhibitors: e.g. saquinavir (prevent cleavage of viral protein precursors).